

## **Financial Policy Targeting in the EU\***

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### **Abstract**

Since the European Central Bank's current goal is to achieve stable prices, some EU countries have adopted direct inflation control as a target of financial policy. Several other countries, however, have adopted other targets, such as monetary targeting, exchange rate targeting or other targeting. Analysis of this paper shows that the openness of the economy, the central bank's independence, and the fiscal surplus are negatively correlated with adopting inflation targeting. Past inflation is not a motivation for introducing inflation targeting in the EU.

### **1. Introduction**

Inflation targeting has recently been adopted by many countries, and along this trend, a lot of dispute about the validity of inflation targeting has been ongoing. Inflation or price stability is one of the most important assignments for policy makers, especially central banks, whether inflation targeting is adopted or not aside<sup>1</sup>. Under the Maastricht treaty, the ECB (European Central Bank) has stated that its primary goal is stable prices and set the target of inflation rate, and all member countries should focus on controlling inflation.

Several instruments are used to achieve price stability. Inflation targeting, monetary targeting, exchange rate targeting, or current account targeting has been introduced to achieve price stability in many countries worldwide. Among these tools, inflation targeting has been used recently in many countries. It is said that the number of countries that do inflation targeting has been increasing. This is because inflation targeting is thought to be the most direct method of achieving price stability. Central bank policy's reform has become a method of increasing independence and responsibility for policies. This is especially true for price stability in developed countries. However, upon checking historical details, the number of countries which have clearly adopted inflation targeting is not so large. Some countries in the EU have introduced other measures to achieve price stability. For example, Germany has targeted money supply rather than inflation targeting as a middle step towards achieving price stability.

In this study, I analyze why countries in the EU adopt inflation targeting. In the EU, ECB introduced a single financial policy after the common currency 'Euro' started. And we can think that inflation targeting was also introduced. It is important to look back to the past and understand the stance of each country for analyzing the trend of the monetary policy, the effect, and the influence in the future. There haven't been many ideas about inflation targeting from academic circles yet (Svensson, 2002). As for Europe, it is still a saucer. The value of this paper is sure to be found from the meaning of this term.

This paper is structured as follows. Section 2 analyzes the advantages and disadvantages of inflation targeting as financial methods for achieving price stability. In section 3, a probit model is used to present an analysis of the reasons for introducing inflation targeting. Section 4 summarizes the results briefly and presents conclusions.

## 2. Financial policy's target

### 2-1 Characteristics of inflation targeting

The purpose of this paper is to look over the advantages and disadvantages of inflation targeting and to analyze the reasons for introducing inflation targeting. This section considers merits and demerits of inflation targeting which begins to be adopted in developed countries and ECB considers as a means of the monetary policy.

In general, inflation targeting is central banks making the target value of the inflation rate in public, beforehand, and monetary policy is carried out under this target<sup>2</sup>. We sometimes call this one step approach because inflation rate, which is the final target of monetary policy, is made a direct target. In developed countries, the policy is to control the inflation rate within the appropriate range so that the inflation rate does not go over. CPI or other easily observable and available data is used. As for this policy, because the inflation rate is clarified against the target, the accountability and the transparency of central banks are demanded more and more. Furthermore, future inflation and the influence of monetary policy should be on the policy side.

It has not been long since this policy was first adopted. In fact, New Zealand adopted this policy first, in 1990. At that time its purpose was to control high inflation rate, however these days its purpose has changed largely due to the worldwide recession. And the number of countries that have adopted inflation targeting has been increasing over the past ten years. According to Mishkin and Schmidt-Hebbel (2001), the number of countries which have adopted inflation targeting in the world is nineteen as of November 2000<sup>3</sup>. The United States has not adopted it yet, however, the Congress discussed it in 2002. Countries which take inflation targeting is not limited to developed. Table1 is the list of the countries where inflation targeting is applied. The listed countries are EU nations and other countries. The table includes the country, date introduced, target width, target index, target horizon, target set by, and publication of inflation forecast.

Table 1 Implementation and design of inflation targeting in the EU and main countries

Country	Date Introduced	Target width	Target index	Target horizon	Target set by	Publication of inflation forecast
Australia	Sep. 1994	2 ~ 3 %	Underlying	Over one business cycle	Jointly by Gov. and CB	Yes
Canada	Feb. 1991	1 ~ 3 %	CPI	To the end of 2004	Jointly by Gov. and CB	Yes
Finland	Feb. 1993	2%	Underlying CPI	Indefinite	CB	No
New Zealand	Mar. 1990	0 ~ 3 %	CPI	Indefinite	Jointly by Gov. and CB	Yes
Spain	Nov. 1994	2%	CPI	1 year	CB	Yes
Sweden	Jan. 1993	1 ~ 3 %	CPI	Indefinite	CB	Yes
United Kingdom	Oct. 1992	2.50%	RPIX	Indefinite	Gov.	Yes
EU (ECB)	Jan. 1998	<2 %	HICP	Indefinite	CB	Yes

Note) The source is based on Gerlach (1999), Kahn and Parrish (1998), Cargill, Hutchison and Ito (2000), and Mishkin and Schmidt-Hebbel (2001). ECB does not admit the existence of inflation targeting.

The European Central Bank does not admit inflation targeting because of the following reasons ; policy makers need to analyze background information of inflation rather than the expected inflation itself, the time horizon for targeting is arbitrary (no definite reason), and looking at a single variable, inflation rather than several variables is not good. However, inflation targeting might be substantially adopted, according to Table 1, by ECB. Switzerland's situation is similar to ECB.

Similar situations exist in many countries. However, some countries do not publish expected inflation and many countries do not have escape clauses in their policies. In the EU countries, none of the central banks have escape clauses. There are two patterns in the countries where escape clauses are provided. Some countries set inflation rate with the exclusion of perishable foods, energy prices, and tax changes, etc., and use it as inflation targeting. The Czech Republic and South Africa (Switzerland) use this. There is an advantage to this : the range of responsibility of authorities is specified. However,

making this target price index and having it admitted in the market are difficult. The reason for the second one is that central banks use the general index as the CPI. When the inflation rate is over the target, escape clause are applied. New Zealand is a typical example. This method has the advantage of using the general index as the CPI, however. Judgments as to whether escape clauses are admitted or not are made later.

## 2-2 Advantages and disadvantages of inflation targeting

Why do financial authorities set inflation targeting? First, the realization of the central bank's goal in developed nations, price stability, might not be judged clearly unless clear standards exist. Secondly, by making the central banks' goal clearer and more transparency, the accountability of target (misses) and the independence of the government etc., are guaranteed. Thirdly, the stability of the expected inflation rate is realized (Bernanke et al., 1999). And finally, inflation itself is reduced (Almeida and Goodhart, 1998, Corbo and Schmidt-Hebbel, 2000).

Now, the so called two step approach. This policy is introduced because the influence of monetary policy cannot be expected as a time lag exists between the policy and its influence, and central banks policies tend to be arbitrary. Consequently, the independence of the central bank may be ruined. To set money supply as middle target, there must be a stable relationship between money supply and the inflation rate<sup>4</sup>. And central banks must know the circulation speed, the elasticity of interest rate, and for the EU, detailed and accurate information about the integration of money markets and capital markets. It is needless to say that doing this is difficult because the reality is that obtaining the data in some countries is difficult (Munchau, 1998 ; Skorecki, 2002). In addition, various financial instruments and services have recently appeared, and the EU has been influenced by them. EMI (European Monetary Institute), the former ECB, stated the standards for adopting financial policy : 1) having effectiveness in achieving for price stability, 2) having accountability, 3) having transparency, 4) having a strategy for middle-term,

5) having continuity, 6) having independence (EMI, 1996). According to the above, the following instruments were listed for candidate targets when deciding financial policy targets; an exchange rate, an interest rate, a nominal income, money supply, and inflation. Among them, the exchange rate and the enlargement of the area of the Euro may be inconsistent with price stability. Interest rate was also rejected because of the difficulty in deciding its real level. Also, managing nominal income is difficult. As a result, money supply and inflation were both selected.

The primary goal of ECB is price stability. Central banks all over the world have several financial policy instruments as their tools for maintaining price stability. To achieve this, both monetary supply targeting and inflation targeting have been officially adopted in the EU. For example, money supply targeting has been considered the primary policy tool in Germany, whereas inflation targeting is used in the countries listed in Table 1. The purpose of the European Central Bank is price stability as stated in Maastricht Treaty. And, it seems to be a general view that either the money supply or the inflation rate has been used as a monetary policy target in the countries of the EU region. For this policy, some countries have had conflicts over one united monetary policy. However, it is a fact that ECB strengthens the trend for inflation targeting. ECB publishes the inflation target and makes it its main policy target.

In the next section, determinants of inflation targeting are analyzed.

### **3. Determinants of inflation targeting**

#### **3-1 Background**

In this section, the determinants of inflation targeting in the EU are analyzed. The reason why this paper focuses on the EU is due to the dramatic events of the united currency Euro, the birth of ECB, the united monetary policy and so. It has not been long since these events were introduced. However, this analysis is also necessary to predict

the future of the EU.

Inflation targeting studies have not been done yet. Excellent research such as Svensson (1997/1998), Gerlach (1999), and Mishkin and Hebbel (2001) are already presented. However, these studies are much different from that of this study in terms of preliminaries investigated i. e. countries, econometric methods, explanation variables and etc. Intuitively, past inflation is the most important factor in the decision to adopt inflation as a target of control. If in the past, inflation was high, the possibility of adopting inflation in the future targeting is also high. Table 2 presents each country's average inflation rate from 1980 to 1990. The reason why the time span is limited to 1990 is that inflation targeting has just started or begun to be noticed at that time.

Table 2 Average inflation rates in the EU countries (%)

Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland
5.6	6.4	7.6	8.8	7.0	3.3	21.5	8.3
Italy	Luxem- bourg	Nether- lands	Portugal	Spain	Sweden	United Kingdom	
11.4	6.0	3.1	16.8	9.8	8.1	5.3	

Source) IFS (IMF)

This inflation rate average may affect policy choices. In some countries, inflation remained persistently high in the past. And this paper has taken into account the fact that most of the countries here were candidate of currency integration, Euro. Inflation is one of the criteria for joining the monetary integration. Some countries have pursued policies with the goal of bringing their economic condition, including inflation, into line with those of other low inflation countries.

As for currency integration, fiscal surplus (deficit) has to be taken into account. The condition for this has been most difficult to realize because taking only inflation into consideration is problematic. So it is obvious that an analysis cannot derive the reasons for introducing inflation target if the analysis looks only at past inflation as a factor<sup>5</sup>. The

discussion regarding this will be developed by the following analyses.

### 3-2 Econometric analysis

It is important to investigate whether structural differences exist between countries using inflation targeting and those pursuing other policy frameworks. To explore this relation, this section use probit models in which the dependent variable is a dummy that whether taking unity for those countries and that assigns zero for those countries that did not. The analysis indices the use of variables below to judge what factors affect the probability that inflation targeting policies have been adopted.

The following three variables will be used as explanation variables. The analysis indices the use of variables below to judge what factors affect the probability that inflation targets have been adopted.

Past inflation : Past inflation may give positive effects when adopting inflation targeting. The reason is as previously mentioned. Of course this is not limited to the case of EU. It is possible, however, that there would be a difference between the EU and other areas or nations. In the EU, the movement for currency integration had been ongoing. The data is CPI, and for the UK, the data is RPI as Table 1.

Openness of the economy : Determination of inflation is affected by many factors from abroad and within the nation. Countries which are affected from abroad do not have merits of adopting inflation targeting. Also, if the real exchange rate depreciated, for example, the depreciation would be more harmful due to the rising of imported prices, the more open the economy is. In this case, policy makers have disincentive to inflate. For policy makers, it would be better if the inflation rate more flexible. Making the inflation flexible can change the exchange rate in a desirable direction for policy makers. However, when inflation rate is high, whether this thought is applicable or not would be indefinite. The



answer depends on the econometric analysis in this paper. The amount of trade volume (export plus import) to GDP is used for the openness of the economy.

Central bank independence : Price stability is the final goal of the ECB. This goal has been adopted by many central banks. If inflation targeting is conducted under such circumstances, other strategies are inclined to enter especially for political reasons. In this case, the dependence of central banks may be comprised. In fact, this is the reason why money supply is used for targeting instead of inflation targeting. This variable, the central bank independence, is expected to have a negative coefficient on inflation targeting. This paper uses the central bank's independence index of Cukierman, Webb, and Neyapti (1992).

Fiscal surplus : Inflation targeting is effective for observing fiscal discipline. Fiscal discipline is important for economic growth. Therefore, it is assumed that a negative influence affects inflation targeting. However, it is possible that something different will appear in the EU region and in the other areas. To participate in the currency integration, each country has to make fiscal deficit GDP ratio (fiscal deficit/GDP) suppress within 3%. To take this into account, fiscal surplus is also used as an explanation variable. This coefficient, against inflation targeting, is expected to be minus.

Other studies' variables are sometimes used in analysis. The most typical explanation variable is variability of exchange rate. Under EMS/ERM regulations, the exchange rate in each EU country, however, is restricted. Therefore the variability of exchange rate is omitted<sup>6</sup>.

The econometric analysis here is divided into two parts, namely, EU and OECD. The reason why OECD is adopted is that OECD countries' economic conditions are not far from EU countries. The availability of data is another reason. The sample period is from

1976 to when the country first introduced inflation targeting. Around 1976, many countries' economic conditions were stabilized after the first oil shock. The end of the period is different from each country listed in Table 1. The data is pooled. All the data was I (0). The result is as Table 3a and 3b.

**Table 3a Probit analysis for inflation targeting -EU-**

Constant	Past inflation	Openness of the economy	Independence of central bank	Fiscal surplus
-12.41 (20.08)	0.97 (0.94)	-0.06 (20.58)	-2.74 (3.84)	-3.14 (3.53)

Note) ( ) is p value. Log of likelihood : -4.87

**Table 3b Probit analysis for inflation targeting -OECD-**

Constant	Past inflation	Openness of the economy	Independence of central bank	Fiscal surplus
-20.46 (11.53)	1.32 (1.38)	-0.04 (17.41)	-2.67 (3.64)	-3.19 (3.74)

Note) ( ) is p value. Log of likelihood : -5.00

The result is almost as expected.

The coefficient of inflation targeting is minus as expected, however, it is not significant against inflation targeting in the EU. In the EU, inflations rate had been decreasing. The main reason for this is currency integration. Suppressing inflation rate is one condition for currency integration. In 1990 the inflation rate had been decreasing rapidly. On the other hand, the OECD countries' coefficient to inflation targeting is larger than the EU's one. However, it is not also significant.

The coefficient of openness of the economy against inflation targeting is as expected. The coefficient is minus and significant. The absolute value of EU is larger than the OECD's one. This is due to the large degree of openness of the economy in the EU.

The independent of central banks affects on minus influence on adopting inflation targeting. The coefficient of fiscal surplus is also minus as expected.

The ECB have decided to watch both inflation targeting and money supply at least for

the time being. The main point of the ECB strategy of monetary policy is to announce the reference value of a quantitative definition of inflation and money supply. For inflation rate, the ECB set HICP (Harmonized Index of Consumer Prices) and it must be within 2% to the previous year. For money supply, the ECB also set the reference rate. The reference value of the ratio to the previous year +4.5% is set, and money supply is monitored by comparison with the three months moving average in the previous year of M3. EU countries had adopted different monetary policy strategies, so adopting two monetary strategies at the same time would be better. Of course this policy would be re-made depending on future economic conditions.

#### 4. Conclusions

This paper analyzed the merits and demerits of inflation targeting. The reasons for adopting inflation targeting in the EU was not attributed to past inflation rates.

Additionally, it was confirmed that the openness of the economy, independence of the central bank, and fiscal surplus were minus factors of inflation targeting. However, the necessity for hurrying to adopt inflation targeting could not be found. In the EU the fundamentals of the economy are not so good. The Euro has just started, and the one like 'real exchange rate targeting' may be suitable so as not to change the real exchange rate. Globalization's progress is one reason. To achieve this, the inflation rate is adjusted to make the real exchange rate stable. Adopting inflation targeting conflicts with political interests and the inflation rate in the EU is not so high. And each country has nervous for interests of it's own. However, money supply targeting is also difficult. In the EU or the participating countries of the Euro, all countries cannot grasp the functions of money demand and money supply immediately and accurately. Nowadays financial innovations are ongoing and the traditional money supply has to be changed. Moreover, when money supply is made a target, higher preparation rate is often imposed. Banks would not like

it. However, data is being gathered comparatively promptly and accurately in recent years. Therefore, if central banks stick to the money supply, it would be better to treat it not as the middle target but one of policy strategy.

Let's go back to inflation targeting again. Several criticisms exist against inflation targeting. The first one is that inflation does not stop. To avoid this, central banks should clearly set the targets, and maintain the independence. For central bank's independence, central banks should not undertake national debt against their will because of political pressure, for example. Secondly, there is a problem that correct information is given to the forecast inflation rate, too. This might be a problem of credibility to what extent the independence of the central bank obtains. Thirdly, some worry that a long-term interest rate may rise. If the central banks can maintain their independence and fiscal discipline, there should be no problem<sup>7</sup>. Even if inflation targeting is adopted, consideration from another country might be needed in the country that suffers from a liquidity trap and deflation. Japan is typical example. Policy makers should take these specific circumstances into account.

Moreover, above all, theoretical analysis is necessary from the point of view of policy rule, above all. Rogoff (1985), Walsh (1998), Cecchetti (2000), Clarida et al. (1999), Svensson and Woodford (1999), Svensson (2002). Or Taylor rule is also highlighted. However, I want to do with these problems in another opportunity.

## Footnote

1. The instability of prices invites growth, that is verified theoretically and empirically.
2. Refer to Taylor (1979), Fountas, Karanasos, and the and Kim (2002), etc.
3. In the larger sense, inflation targeting puts weight on inflation forecasting, production or production gap, and transparency or explanation power of central banks, other than inflation itself. Refer to Svensson (2002) for details.

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4. Countries other than those listed in Table 1 are the Czech Republic, Israel, South Korea, Mexico, New Zealand, Peru, Poland, South Africa, Switzerland, and Thailand.
5. Kahn and Parrish (1998) says Australia, Canada, Chile, Finland, Israel, New Zealand, Spain, and Sweden have been enumerated as having adopted inflation targeting.
6. This paper adds three countries (Denmark, Sweden, United Kingdom) that did not join the currency integration.
7. Finally, arbitrary of the authorities and problem of the decision person exists and these problems are difficult whether they are solved or not. Good financial policies depend on central banks and the government.

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## References

- Almeida, A. and C. Goodhart, 1998. "Does the Adoption of Inflation Targets Affect Central Bank Behavior?". *Banca-Nazionale-del-Lavoro-Quarterly-Review* 51 (204), Supplement March.
- Bernanke, B. S., Laubach, T., Mishkin, F. S. and A. S. Posen, 1999. *Inflation Targeting: Lessons from the International Experience*, Princeton University Press.
- Cargill, T. F., Hutchison, M. M., and I. Takatoshi, 2000. *Financial Policy and Central Banking in Japan*, MIT Press.
- Cecchetti, S. G., 2000. "Making Monetary Policy: Objectives and Rules". *Oxford Review of Economics Policy* 16 (4).
- Corbo, V. and K. Schmidt-Hebbel, 2000. "Inflation Targeting in Latin America". Paper presented at the Latin American Conference on Financial and Fiscal Policies, Stanford University, November.
- Clarida, R., Gali, J., M. Gertler, 1999. "The Science of Monetary Policy: A New Keynesian Perspective". *Journal of Economic Literature* 37.
- Cukierman A., S. B. Webb, and B. Neyapti, 1992. "Measuring the Independence and Central Banks and Its Effects on Policy Outcomes". *World Bank Economic Review* 6.

- European Central Bank, 2001. *The Monetary Policy of the ECB*, ECB.
- European Monetary Institute, 1996. *Annual Report 95*, April.
- Fountas, S., M. Karanasos, and J. Kim, 2002. "Inflation and Output Growth Uncertainty and Their Relationship with Inflation and Output Growth". *Economics Letters* 75.
- Gerlach, S., 1999. "Who Targets Inflation Explicitly?". *European Economic Review* 43.
- Kahn, G. A. and K. Parrish, 1998. "Conducting Monetary Policy with Inflation Target". *Economic Review* 83 (3).
- Mishkin, F. S. and K. Schmidt-Hebbel, 2001. "One Decade of Inflation Targeting in the World: What Do We Know and What Do We Need to Know?". NBER Working Paper 8397.
- Revankar, N. S. and N. Yoshino, 1990. "An Expanded Equation Approach to Weak-Exogeneity Test in Structural Systems and a Monetary Application". *Review of Economics and Statistics* 72 (1).
- Rogoff, K., 1985. "The Optimal Degree of Commitment to an Intermediate Monetary Target". *Quarterly Journal of Economics* 100.
- Svensson, L. E. O., 1997/1998. "Monetary Policy and Inflation Targeting". NBER Reporter.
- Svensson, L. E. O., 2002. "Inflation Targeting : Should it be Modeled as an Instrument Rule or a Targeting Rule". *European Economics Review* 46.
- Svensson, L. E. O., and Woodford, M., 1999. "Implementing Optimal Policy through Inflation-Forecast Targeting". Working Paper, Princeton University Press.
- Taylor, J., 1979. "Estimation and Control of a Macroeconomic Model with Rational Expectations, *Econometrica* 47.
- Walsh, C. E., 1998. *Monetary Theory and Policy*. MIT Press.